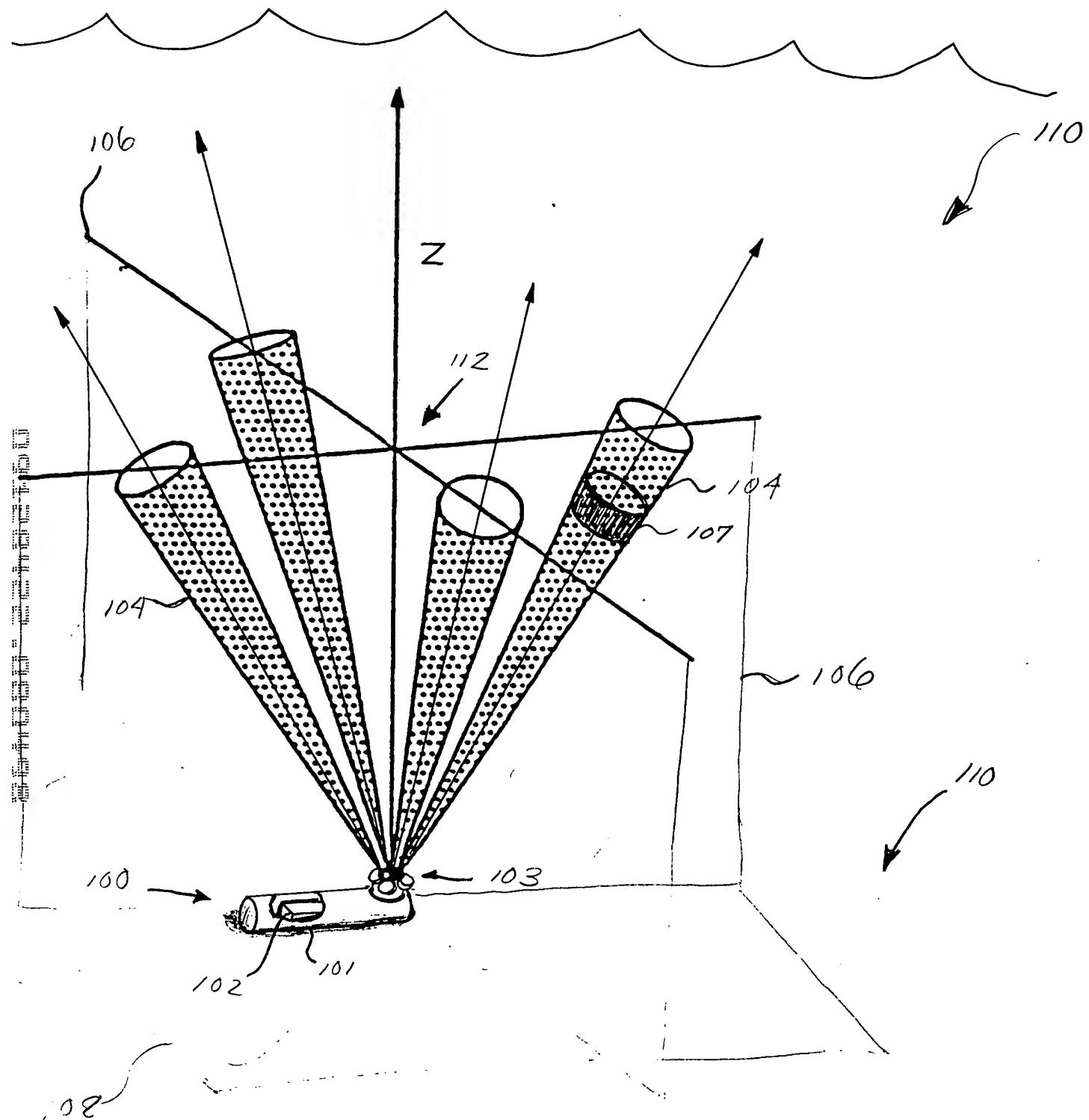


FIG. 1
(PRIOR ART)

FIG. 2a



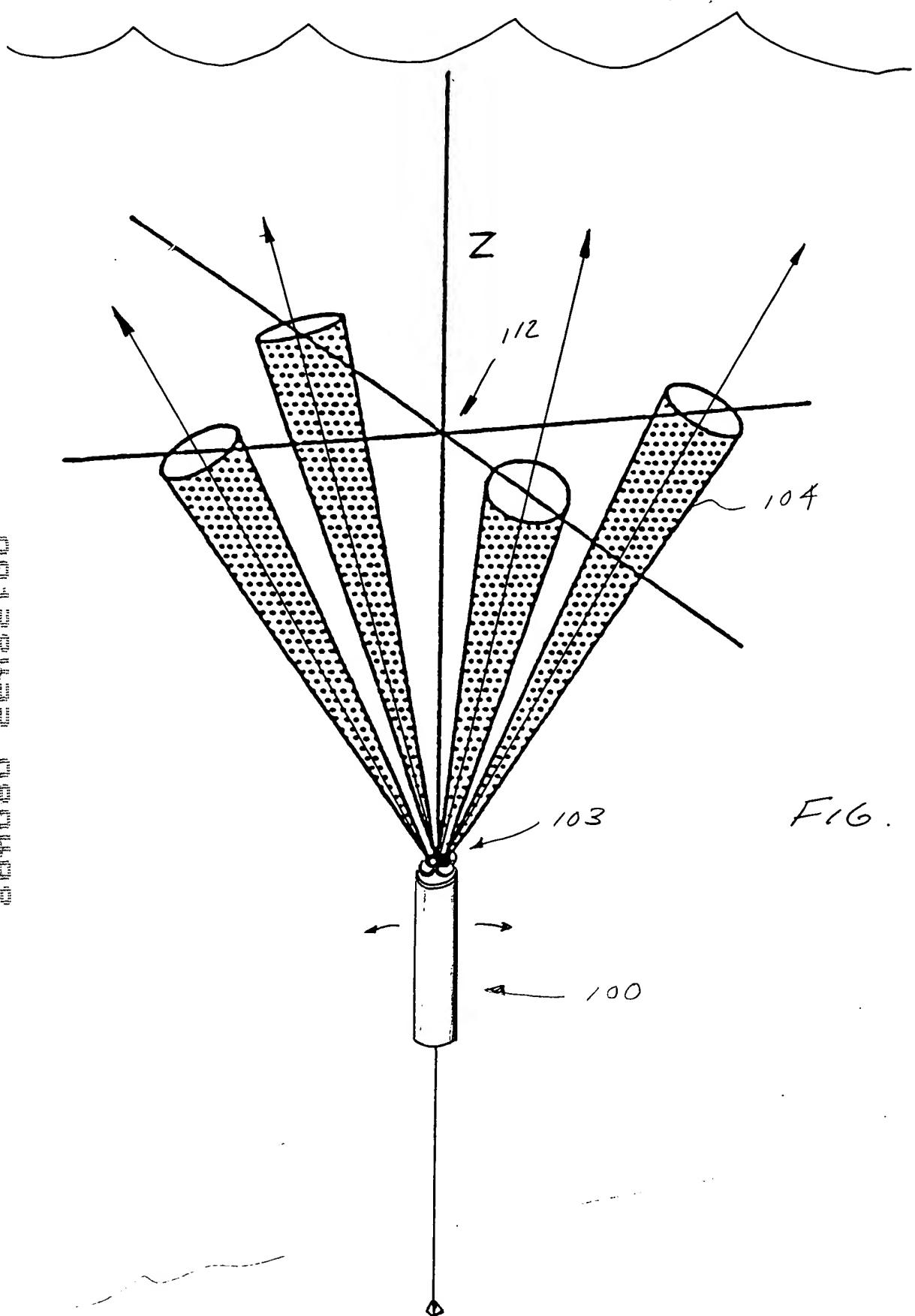


FIG. 26

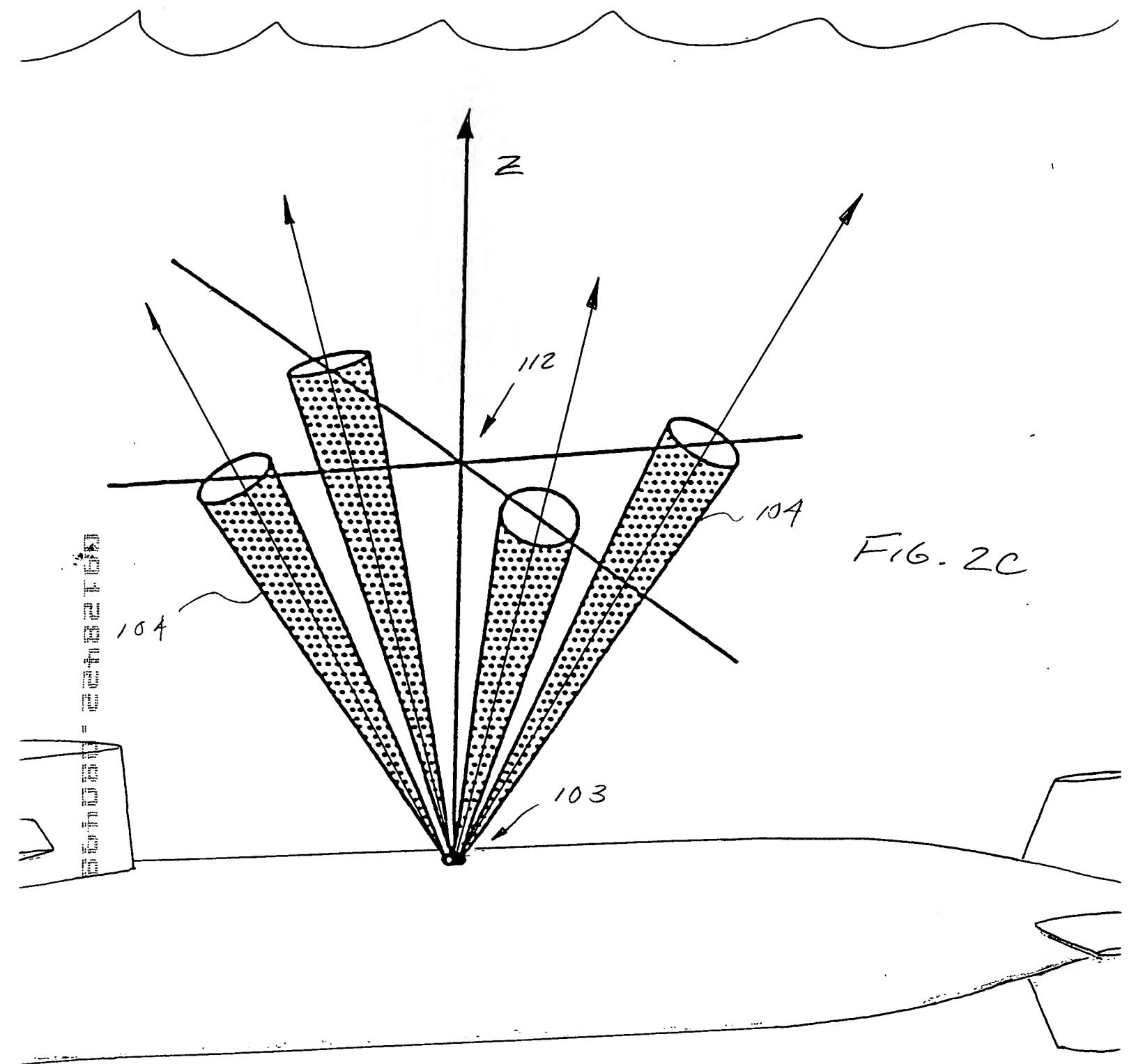
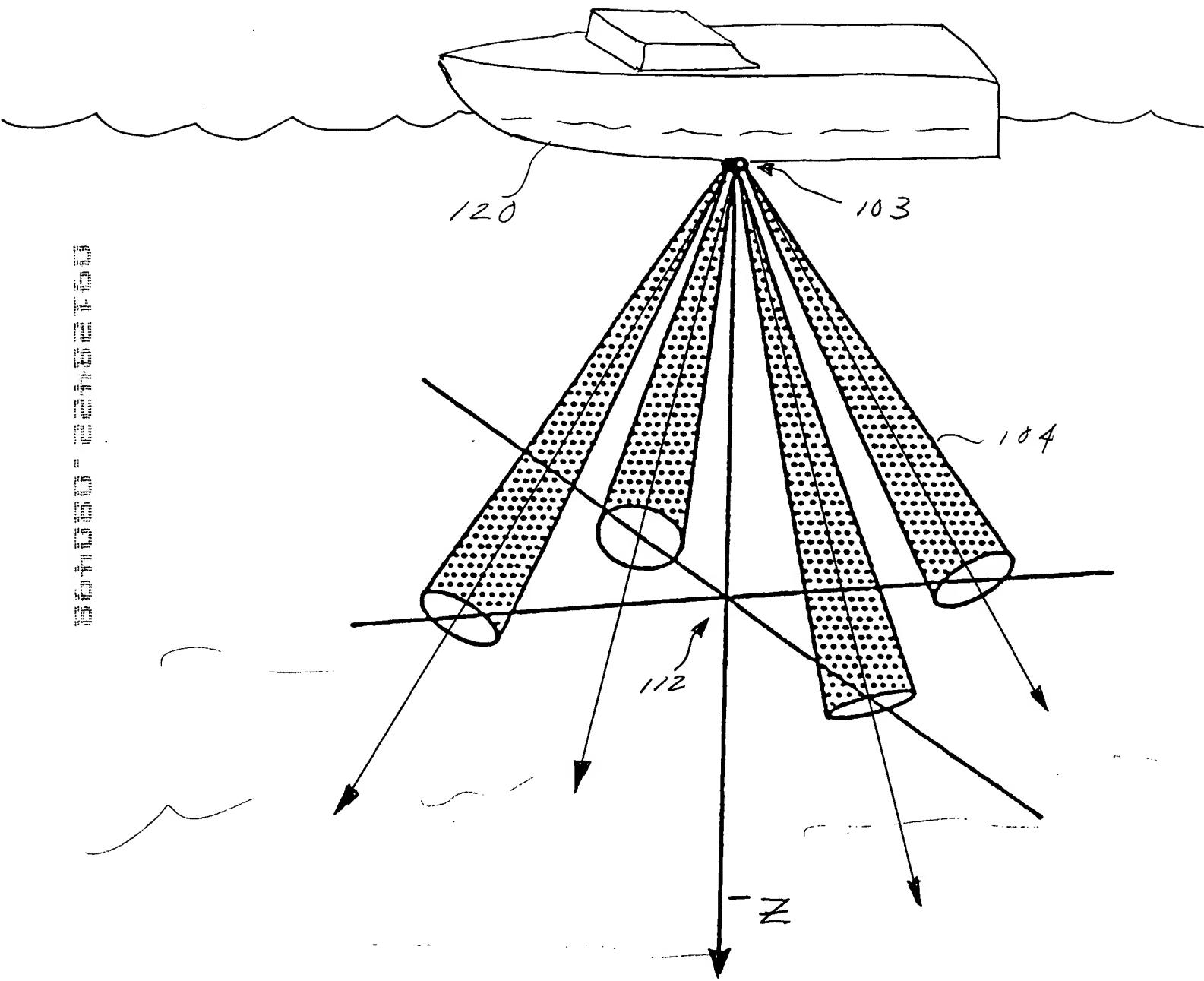


FIG. 2d

CONFIDENTIAL - SECURITY INFORMATION



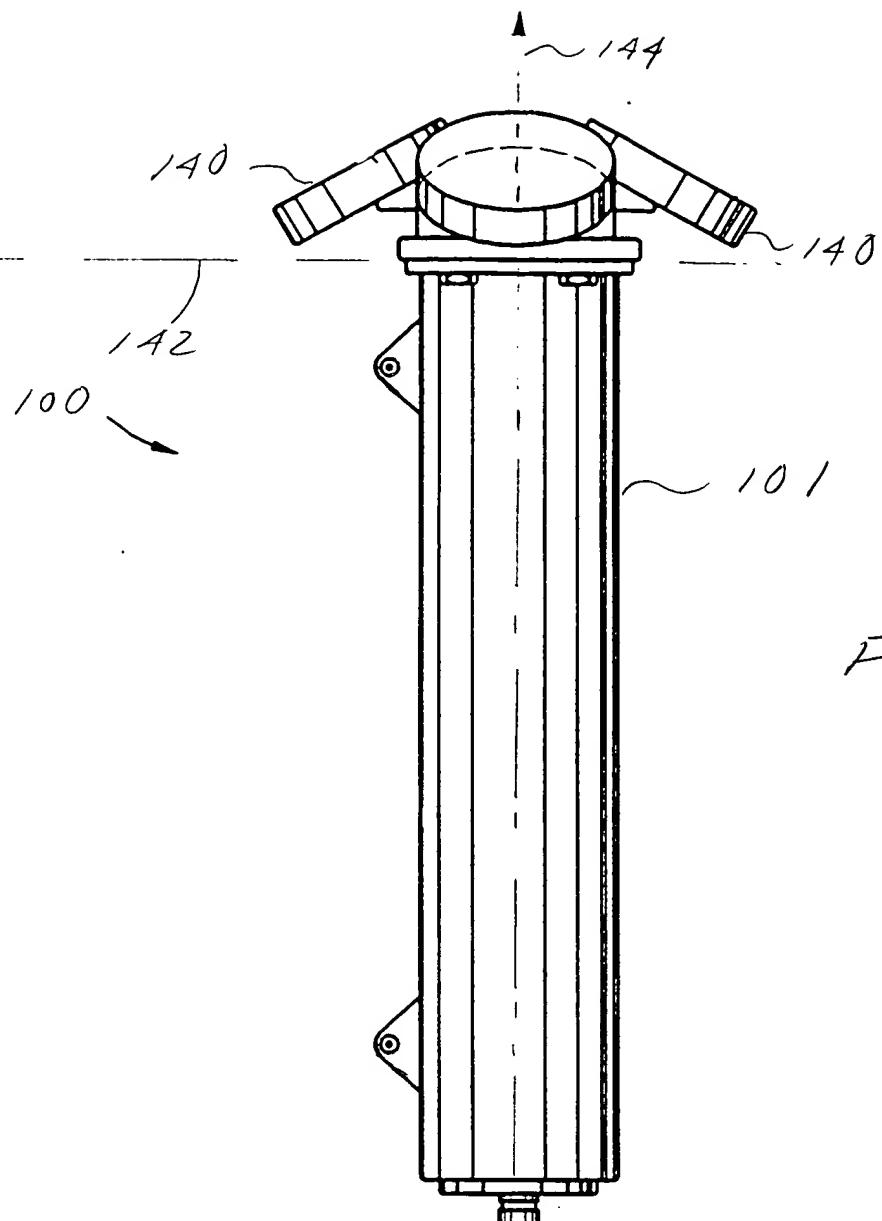


FIG. 3a

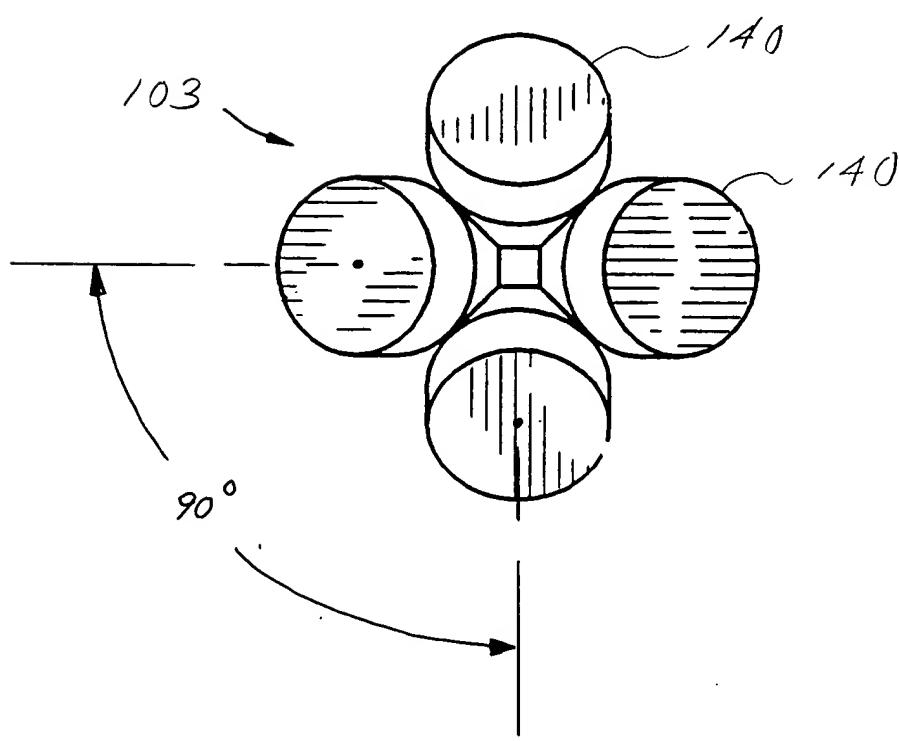
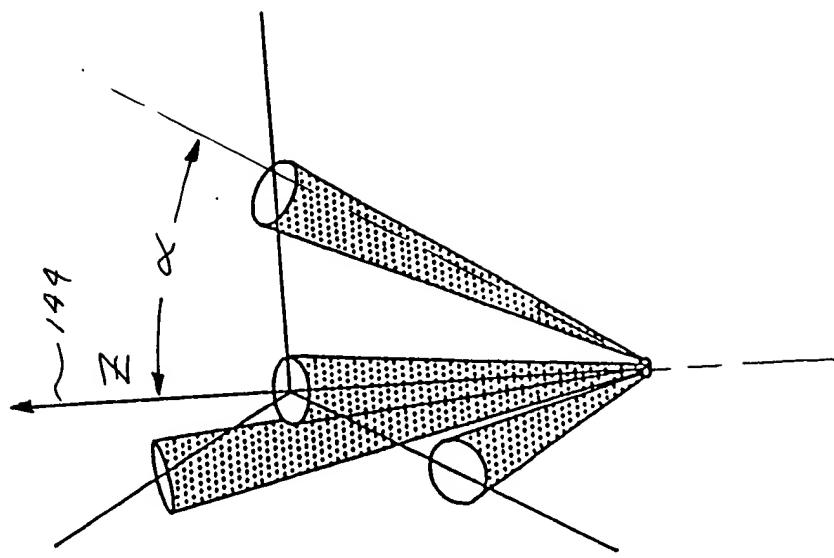
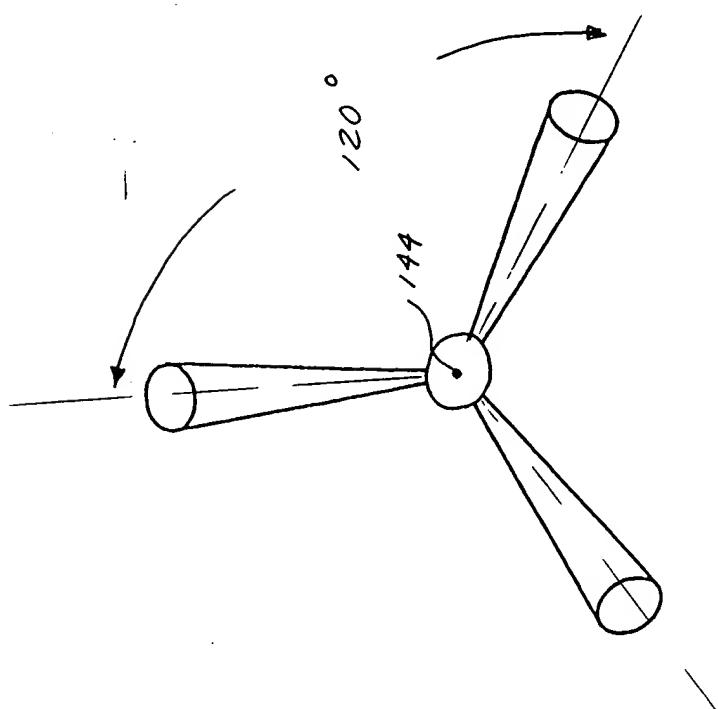


FIG. 3b

F. 6. 30



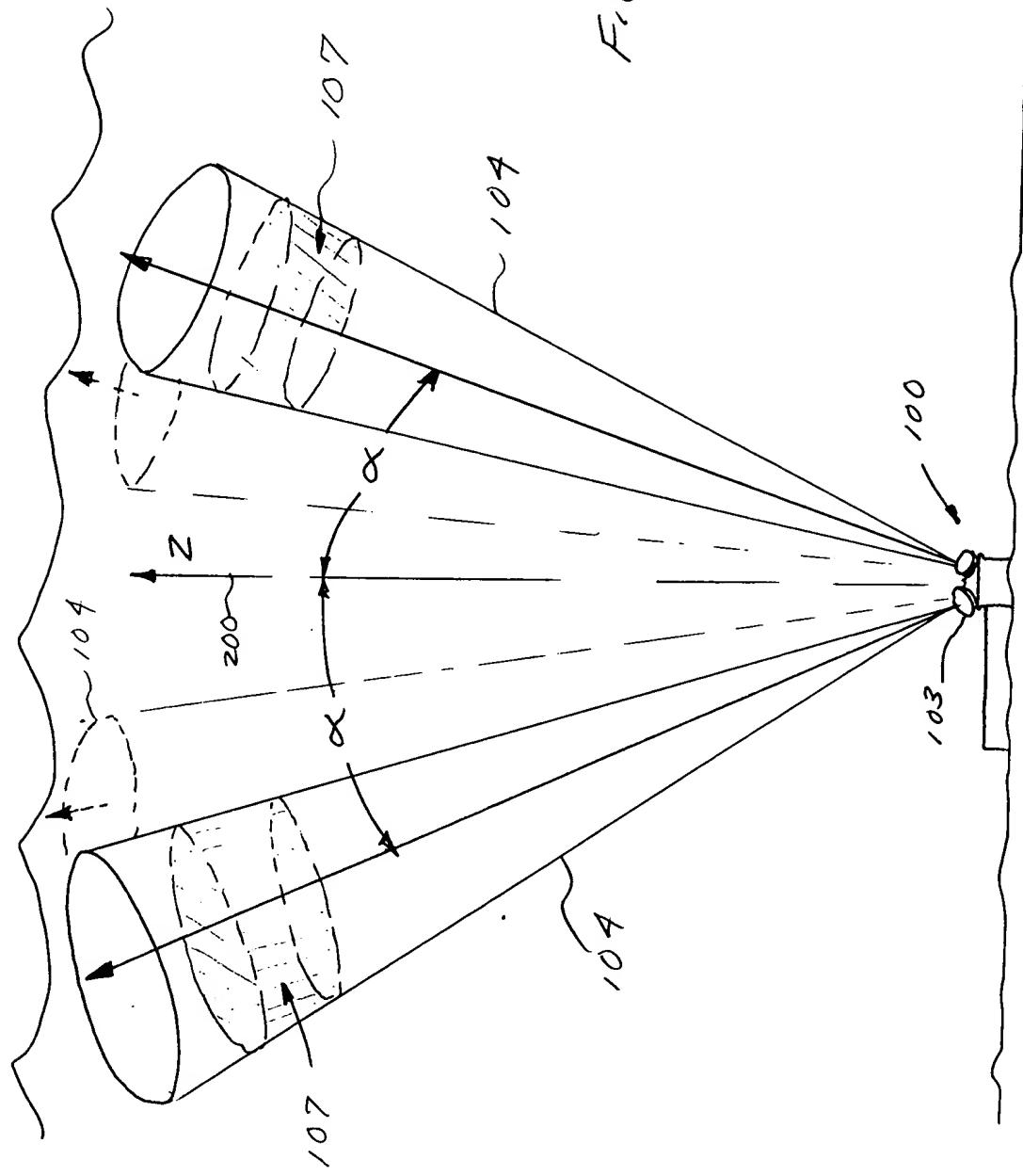


Fig. 6-4

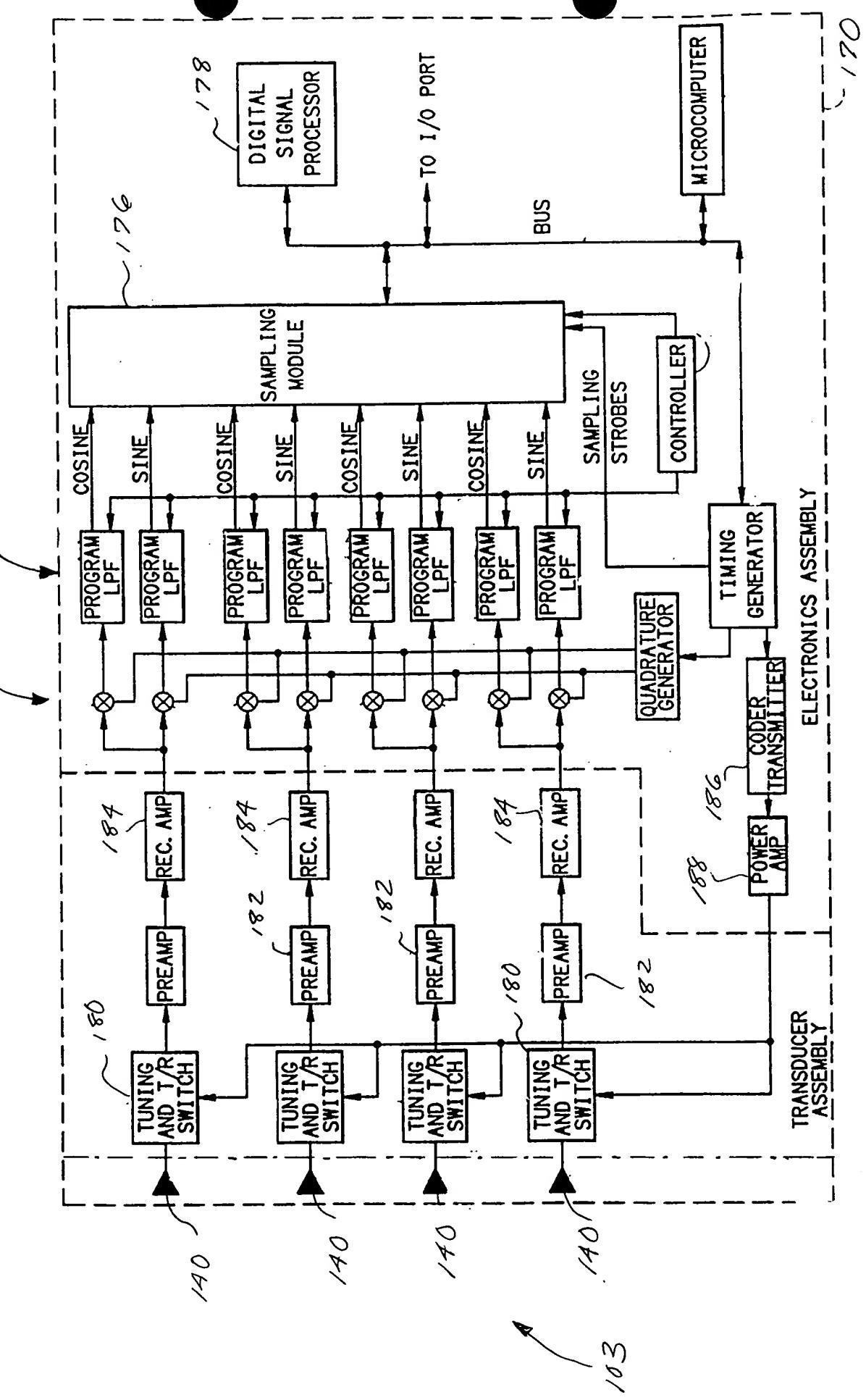


FIG. 6

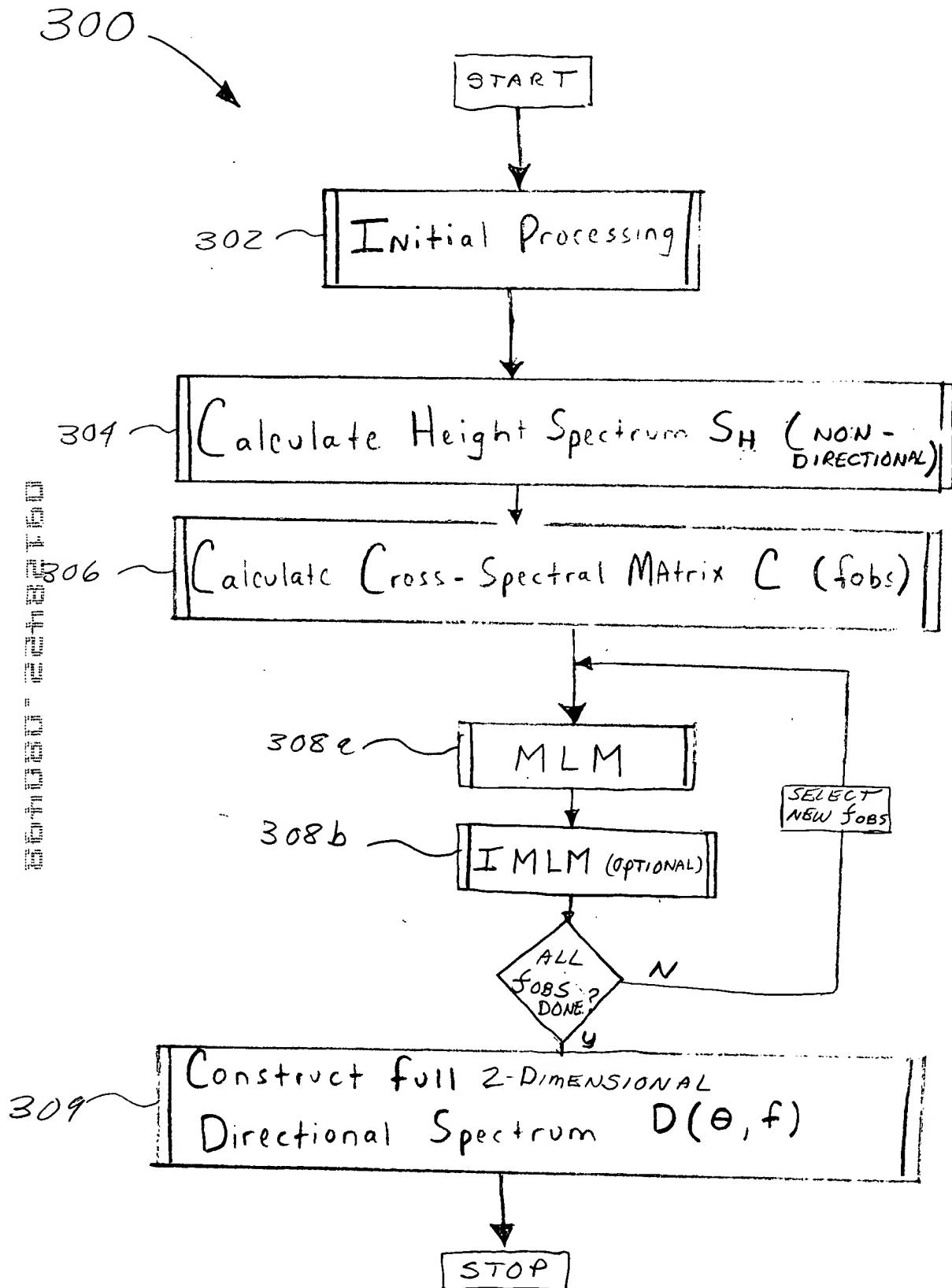


Fig. 6a

302

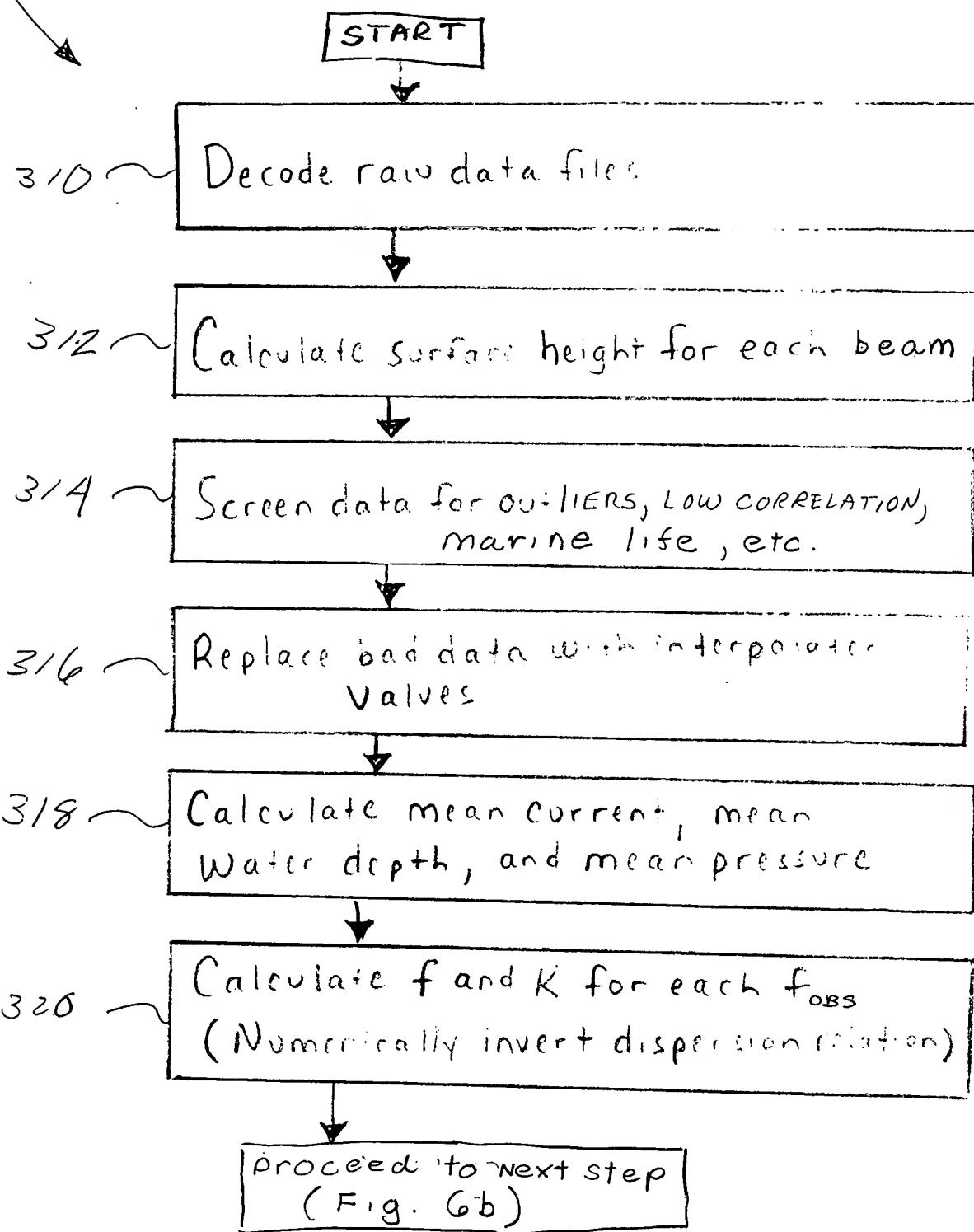


Fig. 6b

304

⋮

⋮

322

Select data from Certain range cells, Surface height or pressure measurements

324

Detrend and Window the data

326

Compute power spectra
(FFT and take squared magnitude)

328

Average into frequency bins
(decimate)

330

Compute Transfer Functions $T(f_{obs})$
for each "sensor"

332

Combine (add) power spectra for groups
of range cells at the same depth

334

Combine all power spectra into one S_H
Using least Squares fit and transfer functions

Proceed to Next
Step (FIG. 6c)

FIG. 6C

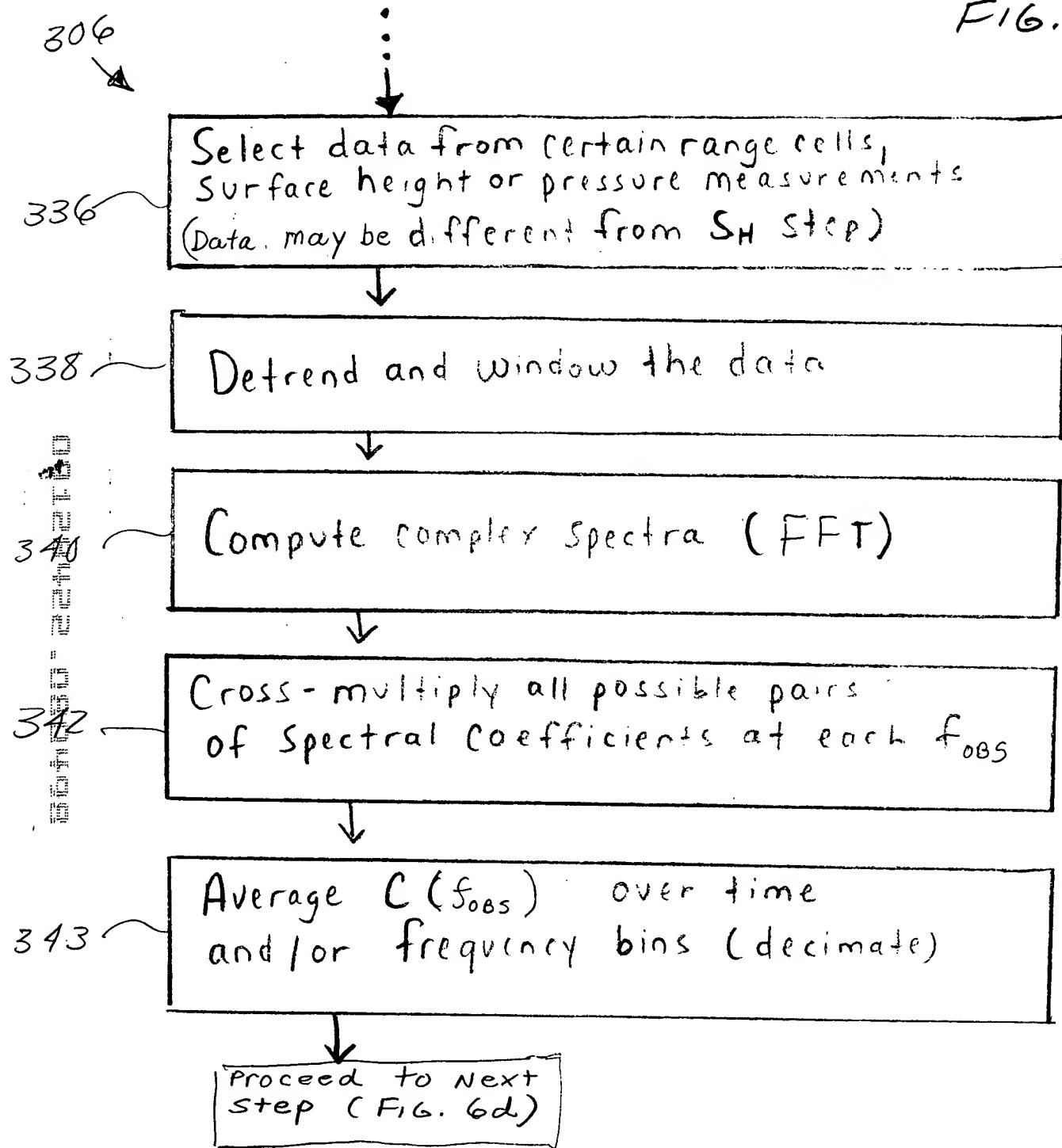


FIG. 6d

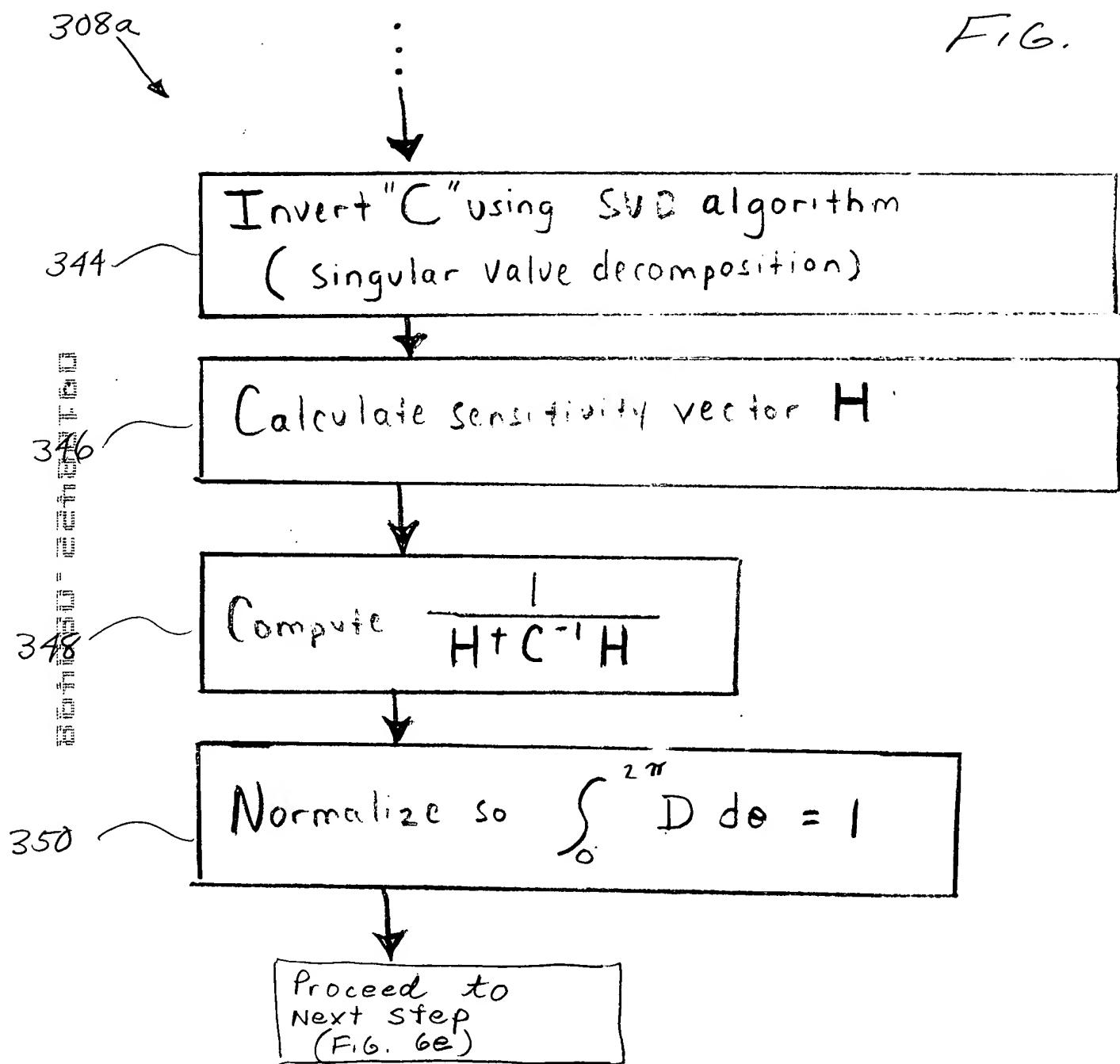


FIG. 6e

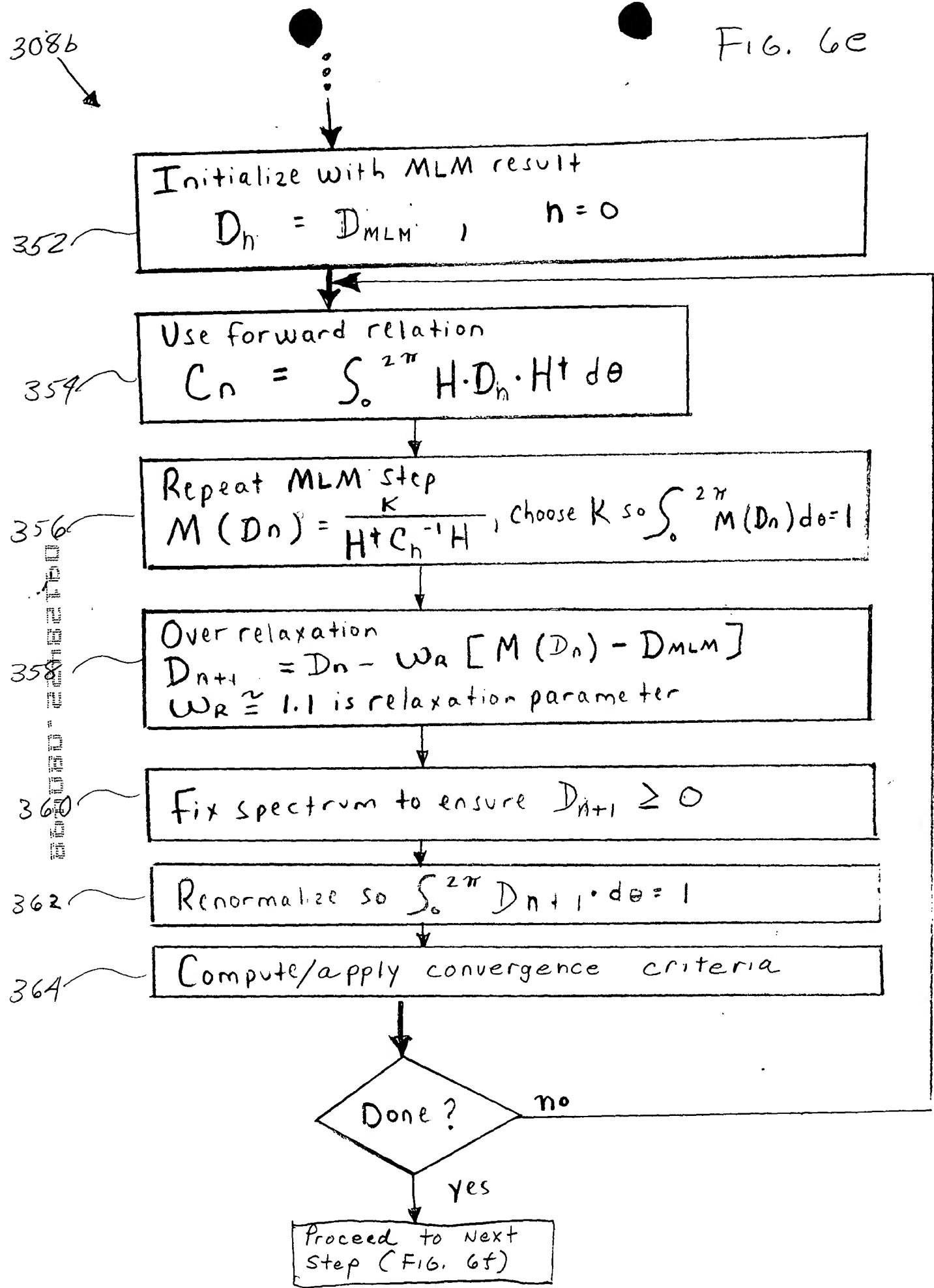


FIG. 6f

309

370

372

374



Renormalize $D(\theta, f_{\text{obs}})$ by multiplying by S_H

$$\text{So that } \int_0^{2\pi} D(\theta, f_{\text{obs}}) \cdot d\theta = S_H(f_{\text{obs}})$$



Non-zero current?

no

yes

Remap frequency and apply Jacobian

$$D(\theta, f) = D(\theta, f_{\text{obs}}(f)) \cdot \left| \frac{\partial f_{\text{obs}}}{\partial f} \right| \theta$$



STOP

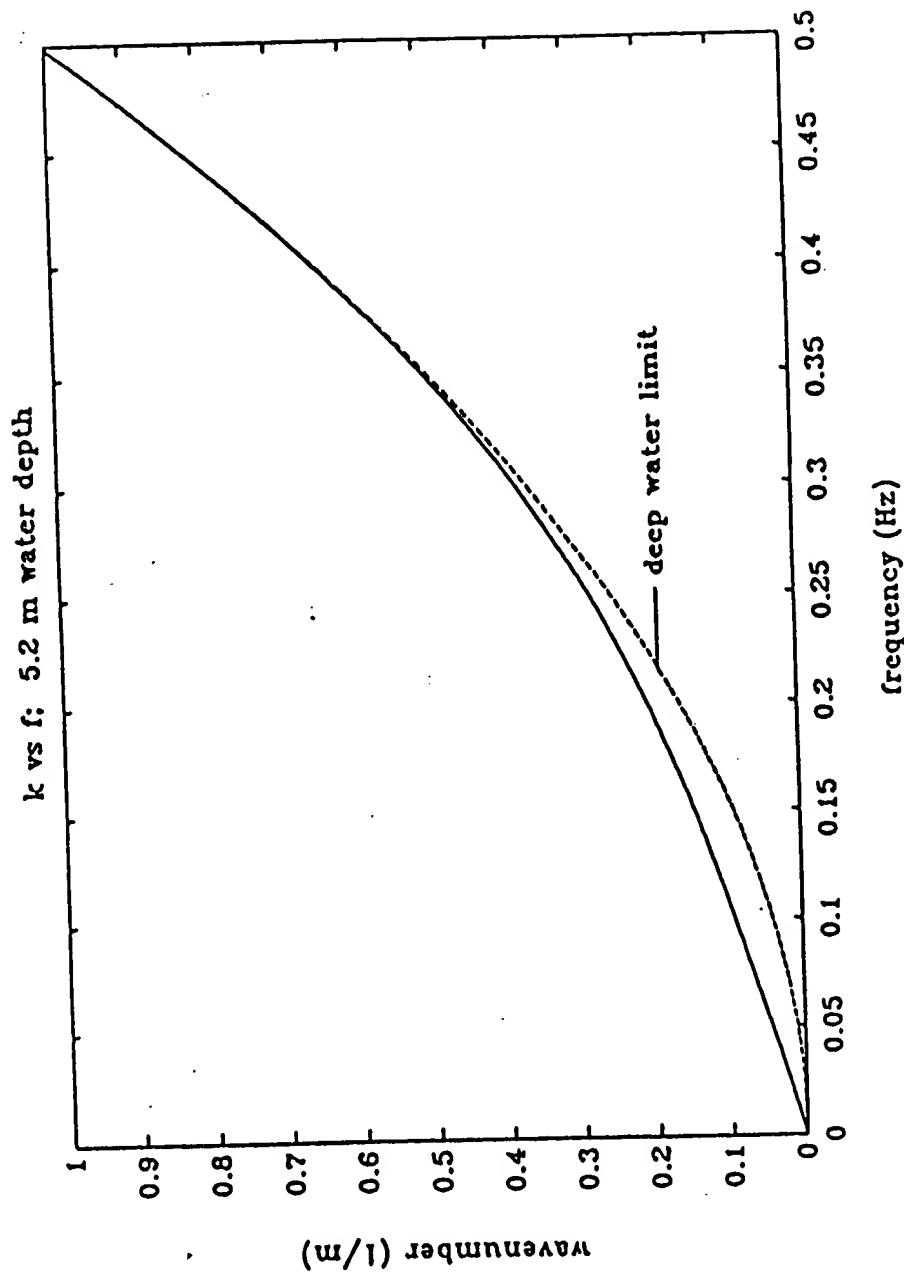


Fig. 7

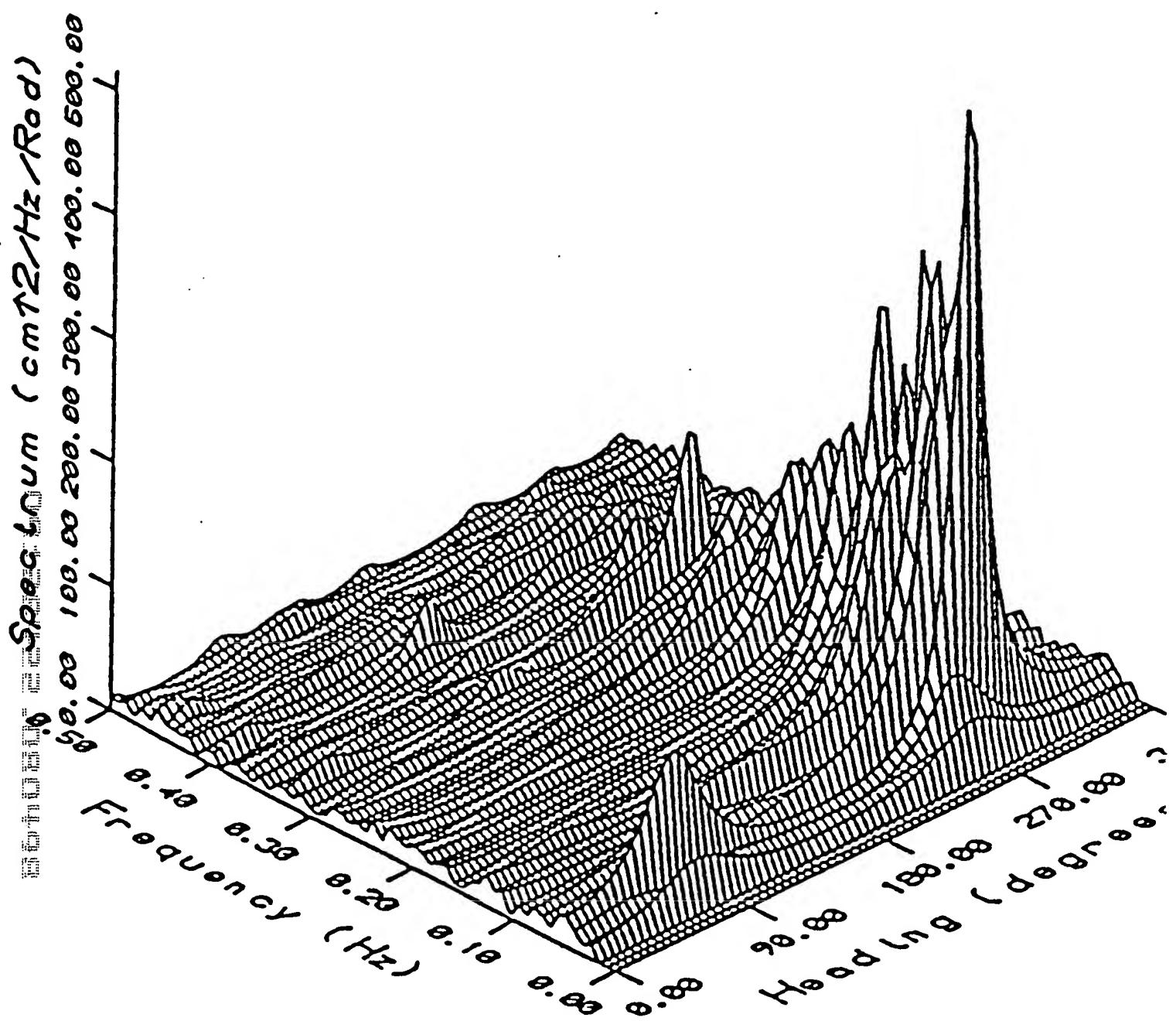
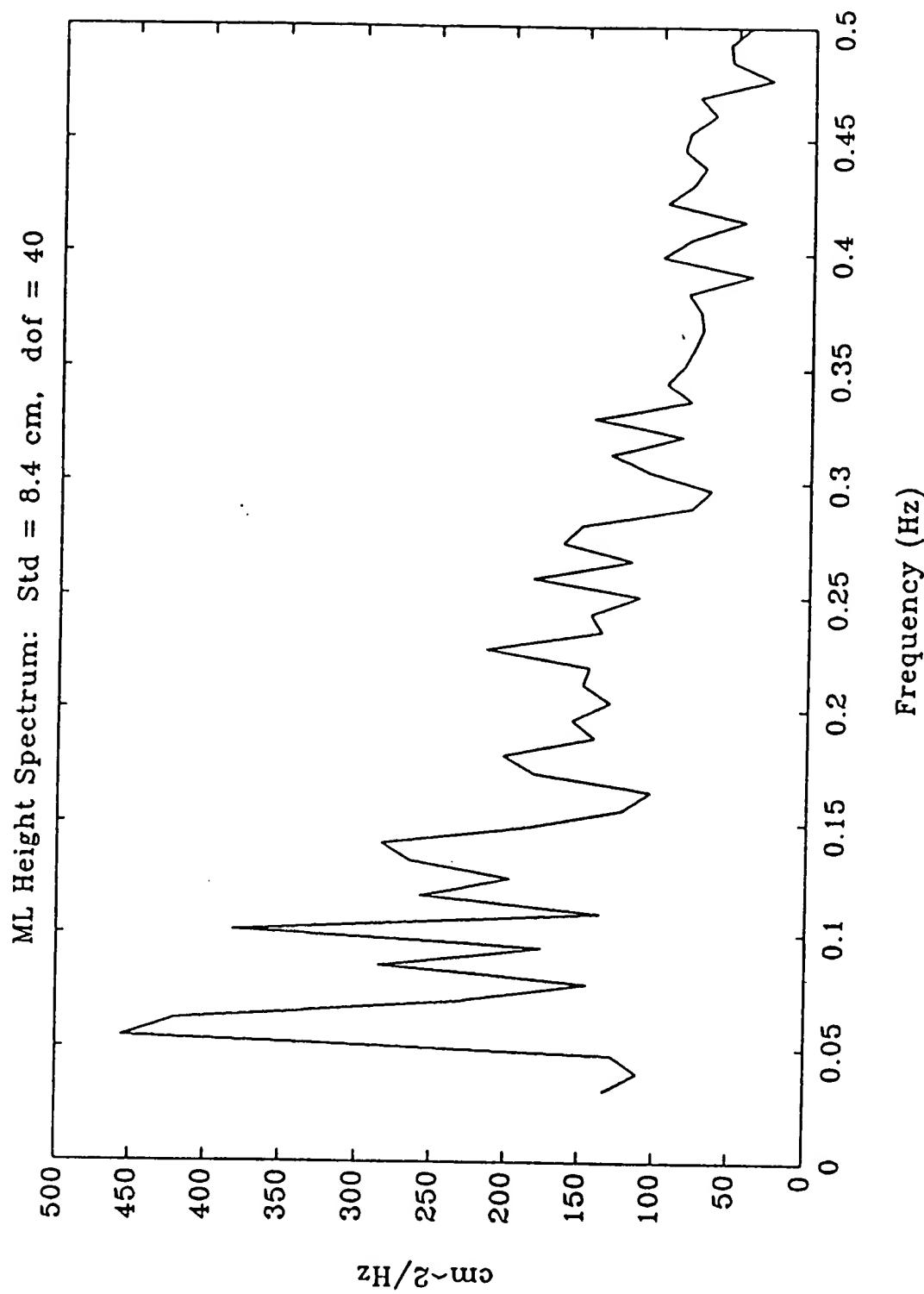
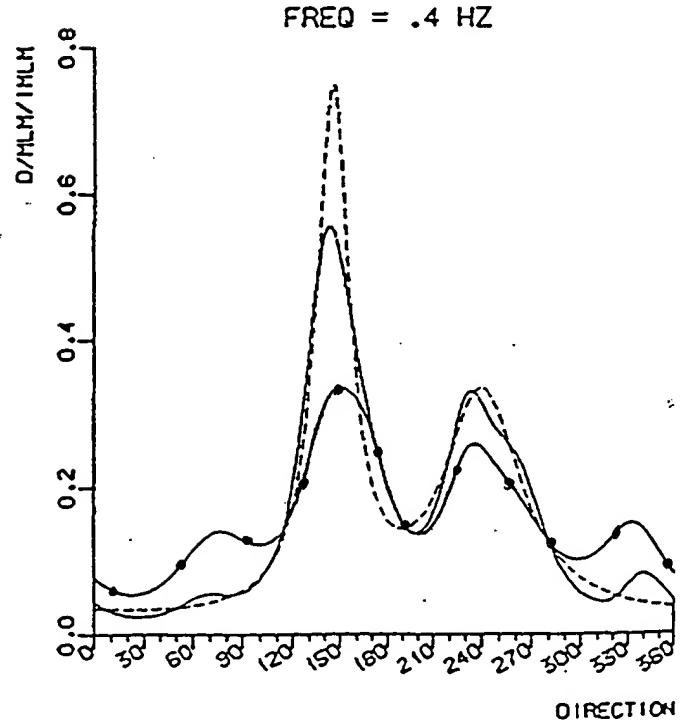
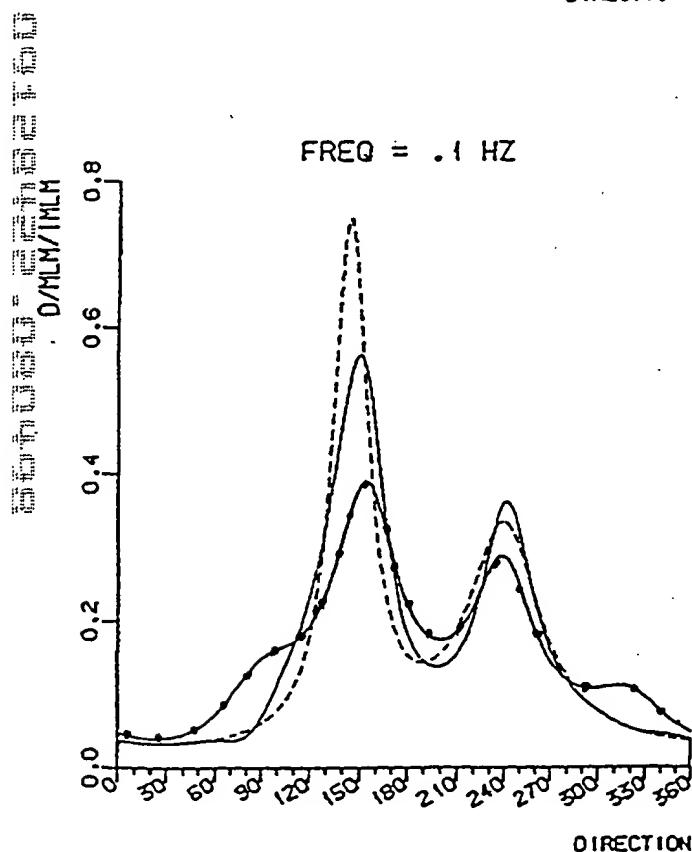
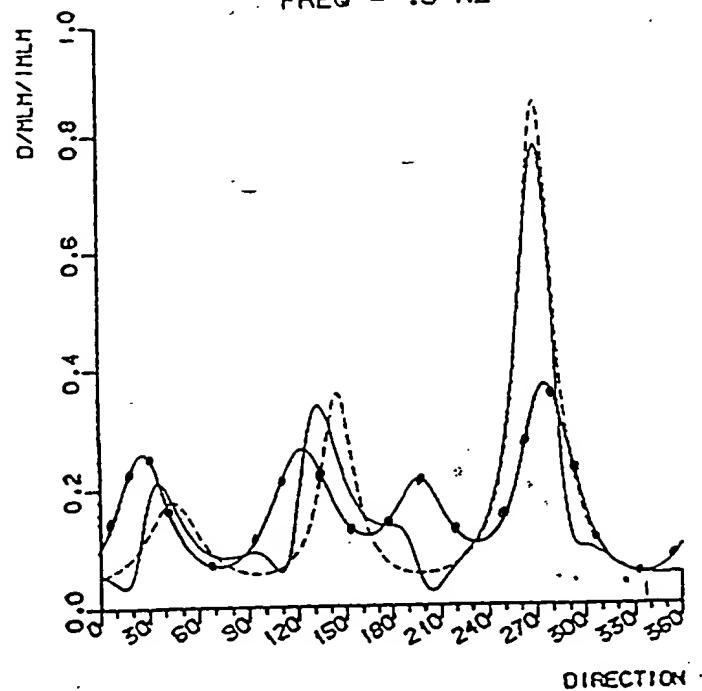
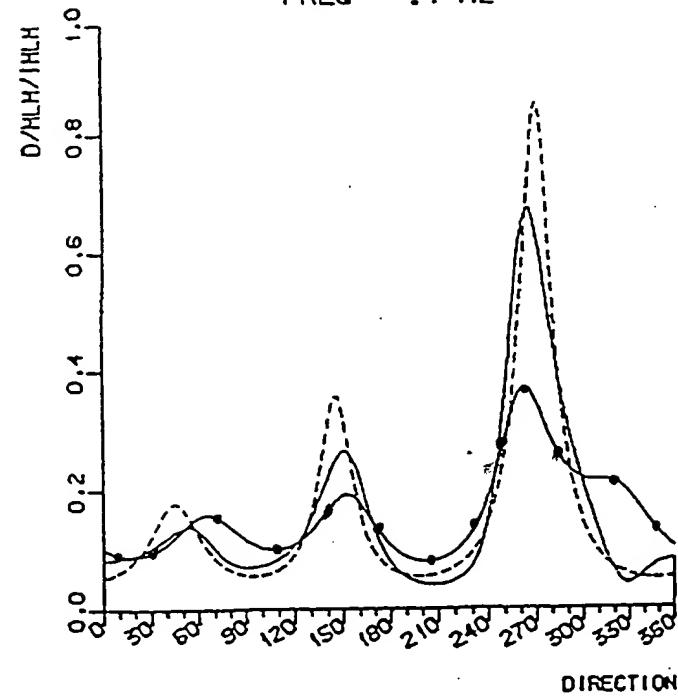


FIG. 8

Fig. 7





- - - INPUT SPECTRUM
 - - MLM
 - - IMLM

FIG. 10

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